

**Susan S. Oltman**  
**2012 NOAA Teacher at Sea**  
**Kittredge Magnet School**  
**6<sup>th</sup> Grade Earth Science**  
**Atlanta, GA**

### **Wavebook Lesson Background**

- **Georgia Standard S6E3. Students will recognize the significant role of water in earth processes.**
- a. Explain that a large portion of the Earth's surface is water, consisting of oceans, rivers, lakes, underground water, and ice.
- c. Describe the composition, location, and subsurface topography of the world's oceans.
- **Subject (Focus/Topic):** This lesson will highlight large bodies of water and introduce students to the research projects being undertaken around the world. Grade Level: 6-12. Middle school: provide suggested resources sheet.
- **Average Learning Time:** approx. 20 minutes in class discussion of project. Five hours of time (outside of class) is estimated to complete this out of class project.
- **Lesson Summary (Overview/Purpose):** Students will choose one ocean, sea or great lake to learn more about and make connections to present day studies. Students will research studies being conducted and learn some of the jobs of Oceanographers and Marine Researchers and Scientists as well as the organizations and universities that conduct and support this research. Information will be presented in an engaging format as a summative assessment.
- **Overall Concept (Big Idea/Essential Question):** What is known about certain bodies of water? What additional information is needed for society to make beneficial decisions regarding water as a global resource? How do scientists learn more?
- **Objectives/Learning Goals:** Students will find at least one body of water currently being researched and provide information on at least 3 studies as well as reflect on one study.
- **Background Information:** Students have learned about the world ocean as well as geographic information about the major bodies of water in the world.
- **Common Misconceptions:** Many students believe that oceans are researched only through scuba diving, submarines, or other submersibles. Another is that only universities located in coastal areas perform ocean research. These common misconceptions will be refuted through investigating the broad range of organizations conducting research and the techniques used to do so.
- **Materials:** Computer and internet access for all students, 8 ½ X 11" paper
- **Wavebook** template and rubric
- **Teacher Preparation:** Copies of handouts (included in this document). Allow online access to the electronic version of the documents through school website to allow students to prepare this project fully on line if teacher chooses.
- **Extension:** Jigsaw learning presentations: Groups of students who selected the same body of water present to the others.

**Grading Rubric for WAVEBOOK project**

Page 1 : 50% of grade

Page 2: Facts -20 %

Narrative – 20%

Resources – 10%

Included in this grading is neatness, coherency, writing at or above grade level, and using your own words. This may be done neatly in ink or on a computer. No pencil!

*Reminder: Copying directly from a resource is plagiarism and will result in a grade of zero and a requirement to redo the project.*

Page 1 information key

1. Name of body of water: ocean, sea, bay, or great lake
2. Status – current condition, scientific significance or trend, tectonic trend
3. Area – Latitude and longitude boundaries, surface area (sq. km or miles)
4. Scientific facts – Average depth, thermocline, topographic or tectonic features, discoveries, historic storms. List at least 5.
5. Research relationships – organizations or universities that are conducting research and the name of the project. List at least 3.
6. Currents: name at least 3 and describe direction of flow OR draw a diagram with arrows.
7. Neighbors: Adjacent countries or tributaries (rivers, estuaries, etc.)
8. Diagram / sketch of body of water in color

Page 2 requirements

ELABORATE ON # 5 (above) – CHOOSE ONE RESEARCH PROJECT AND LIST THE FOLLOWING:

Name of project

Year project began

Goal of project or scientific question being investigated

Sponsoring organization and / or university

Description of the information being collected

Preliminary findings

Narrative:

Your opinion and thoughts on this project, including:

Why should it continue, be expanded, or be discontinued?

If you were assigned one job on this project, what would you choose and why?

Any questions you have for the scientists

Any connections you can make to either what you have learned or your travels

Resource(s) you used to gather this information

Suggested internet resources for Research Projects:

<http://www.cop.noaa.gov/> ( Center for Sponsored Coastal Ocean Research)

<http://www.glerl.noaa.gov/> NOAA Great Lakes Environmental Research Laboratory

<http://www.whoi.edu/main/areas-of-research> Woods Hole Oceanographic Institution

<http://www.afsc.noaa.gov/InternationalResearch/organizations.htm> Alaska Fisheries Science Center

<http://hmsc.oregonstate.edu/programs.html> Hatfield Marine Science Research center

<http://www.rsmas.miami.edu/research/> University of Miami

<http://www.tau.ac.il/~zviba/> Dead Sea Research Center (Israel)

<http://gulfresearchinitiative.org/> Gulf of Mexico Research Initiative

<http://savannah.gatech.edu/cee/groups/tsunami/> Georgia Tech Savannah Campus Tsunami Research

<http://www.ucc.ie/en/news/summary-169271-en.html> University of College Cork, Ireland

<http://www.umaine.edu/marine/> University of Maine

<http://www.geomar.de/index.php?L=1> Helmholtz Centre, Germany

<http://oceandocor.org/cuba-conservancy/> Cuba Conservancy

<http://www.skio.usg.edu/SkidawayIsland>

Many other resources are available. Please document your sources – this is 10% of your grade.

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Name \_\_\_\_\_ HR \_\_\_\_\_ Date \_\_\_\_\_

**Wavebook project grading sheet** – turn this in with your completed project

Page 1  
\_\_\_\_\_ Complete

\_\_\_\_\_ Neat

\_\_\_\_\_ Coherent

Page 2  
\_\_\_\_\_ Information and facts

\_\_\_\_\_ Narrative / reflection

\_\_\_\_\_ Resources listed

Comments:

Final Grade: \_\_\_\_\_

wavebook

status

photos

check in

Body of water:

is \_\_\_\_\_ (status 2013)

Wall

Info

Photos

Friends

Address:

Scientific facts:

geographic picture

Neighbors:

Currents:

Research relationships:

# Wavebook instructions

8

geographic picture

Neighbors:

7

Currents:

6

1

is \_\_\_\_ 2 \_\_\_\_\_ (status 2013)

Wall

Info

Photos

Friends

Address:

3

Scientific facts:

4

Research relationships:

5

## Page 1 information

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Submitted by:

Class period:

Date: